A New *Lyria* (Gastropoda: Volutidae) from Southeastern Madagascar

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ABSTRACT

Lyria patbaili new species is described based on crabbed shells taken in lobster pots off Fort-Dauphin, SE Madagascar, a region with cooler hydroclimatic conditions that demarcate it from the tropical conditions elsewhere in Madagascar. The new species differs from the two other species of *Lyria* living off Madagascar, *L. delessertiana* and *L. tulearensis*, by its much larger protoconch, narrower teleoconch, with fewer and lower axial ribs, less elaborate columellar and parietal plaiting, and a more complex color pattern.

Key words: Indian Ocean, Volutidae, endemism; cold water.

INTRODUCTION

Only two species of volutes (Gastropoda, Volutidae) are presently known from Madagascar, both belonging to the genus *Lyria* Gray, 1847, and both occupying very small ranges along the west coast of the island. *Lyria delessertiana* (Petit de la Saussaye, 1842) is restricted to the northwestern coast, with all accurately localized records originating from the island of Nosy Bé, while *Lyria tulearensis* Cosel & Blöcher, 1977 is restricted to the southwest, near Tuléar [= Toliara, Toliary]. A 1000 km latitudinal gap separates the ranges of these two forms, which Poppe & Goto (1992) treat as geographical subspecies. Apart from one doubtful and unconfirmed record of *Lyria lyraeformis* (Swainson, 1821) from near Tuléar (Poppe & Goto, 1992:72), no *Lyria* nor any other volute is known to occur on the coasts of Madagascar. The new species described here has been obtained in the region of Fort-Dauphin as a byproduct of lobster and crab fishing using baited traps. The shells of the three known specimens were probably occupied by hermit crabs. The soft parts are not known. The depth where the specimens were captured is not known precisely, but based on local fishing habits it is very likely to be less than 100 m, and probably between 30 and 50 m.

SYSTEMATICS

Class Gastropoda
Superfamily Volutoidea
Family Volutidae Rafinesque, 1815
Subfamily Lyriinae Pilsbry & Olsson, 1954
Genus *Lyria* Gray, 1847

Lyria patbaili new species
(Figures 1, 2)

Description: Shell large, fusiform, narrow, very solid and heavy, consisting of 2.0 protoconch and 5.75 teleoconch whorls (Figure 1). Protoconch (Figure 2) large, bulbous, apically depressed, with small slightly involuted nucleus, moderately convex whorls, with smooth, glossy surface, slightly appressed suture. Protoconch/teleoconch transition sharp. Teleoconch whorls moderately convex, with shallow suture. Sculpture consisting of strong, low, orthocline axial ribs, distinctly sigmoid on last adult whorl, discrete, narrow spiral groves in rib interspaces. Sixteen axial ribs on first teleoconch whorls, increasing to 19 on penultimate whorl, 20 on last whorl, interspaces as broad as ribs. Thick labial varix behind peristome. About 10 spiral groves on first teleoconch whorl, 15 on third whorl, more crowded in subsutural zone, becoming more obsolete on penultimate and last whorls. Four stronger, raised cords at base of last whorl. Aperture ovate, narrow, forming a narrow angle adapically, outer lip smooth, inner lip forming a distinct callus over body whorl, expanded, moderately raised over columella; 9 plaits in columellar region, stronger abapically, 3 indistinct wrinkles in parietal region. Siphonal canal broad, short, open. Protoconch violet pink. Teleoconch ground colour pinkish salmon with complex pattern of spiral lines and blotches. Spiral lines brown, interrupted in interspaces between ribs, four on spire whorls, nine on last whorl, evenly spaced, delimiting a subsutural band twice as broad as distance between lines; brown blotches occupying two spiral bands, the broad subsutural band and a narrow band, situated abapically of exposed part of spire whorls and on periphery of last whorl. Siphonal band and edge of siphonal canal with axially elongated brown violet stripes. Aperture creamy salmon.

Type material: Holotype in MNHN. Paratype in the collection of Mr Harald Douté (Bad Säckingen, Germany).

Type locality: Region of Fort-Dauphin [= Taolanaro], southern Madagascar (ca. 25°01′ S, 47°00′ E), from fishermen.

Dimensions: Length 72.0 mm, width 26.0 mm, aperture length 37.0 mm.

Remarks: The paratype shares the characters of the holotype, but is proportionally narrower, with a shorter aperture (length 65.5 mm, width 21.0 mm, aperture length 28.0 mm), and has three, rather than four, brown spiral lines on spire whorls, and eight on last whorl. *Lyr*

Figure 1. *Lyria patbaili* new species. Holotype MNHN. Height 72.0 mm.

Figure 2. *Lyria patbaili* new species. Protoconch of paratype, length 65.5 mm, Douté collection. Scale line = 5 mm.

Etymology: The specific name honors Dr. Patrice Bail, volute collector and expert, and president of Association Française de Conchyliologie. Dr. Bail very generously donated the holotype to MNHN.

Distributional and biogeographical remarks: The size and morphology of its protoconch suggest that *Lyria patbaili,* like many other volutes, has non-planktotrophic development with intracapsular metamorphosis and hatches as a crawling juvenile.

The region of Fort-Dauphin is characterized in Madagascar by its spectacular belts of brown macrophytes, ressembling the algal belts of temperate coasts (A. Crosnier, pers. com.); there are no coral reefs in the area. Published satellite data on winter sea surface temperatures (Piton & Laroche, 1993) confirm a local anomaly, with temperatures as low as 21.5°C, vs 24–25°C or more elsewhere around Madagascar. Although the total range of *Lyria patbaili* is not known, it is tempting to associate the local hydroclimatic conditions with the narrow distribution of certain marine biota. Similarly, *Palinurus delagoae* Barnard, 1926, a commercial species of lobster (Crustacea: Palinuridae) has a range in Madagascar restricted to near Fort-Dauphin, and otherwise extends from Mozambique to Natal (Holthuis, 1984).

With the addition of *Lyria patbaili,* five species of *Lyria* are now known from the SW Indian Ocean (Figure 3) and a further two from Saya de Malha Bank (Bouchet & Bail, 1991). This distribution pattern is coherent with the scenario hypothesized by Bouchet & Bail (1991), who suggested that colonization by lecithotrophic larvae, although a rare dispersal event, is responsible for the existence of morphologically segregate, allopatric species.

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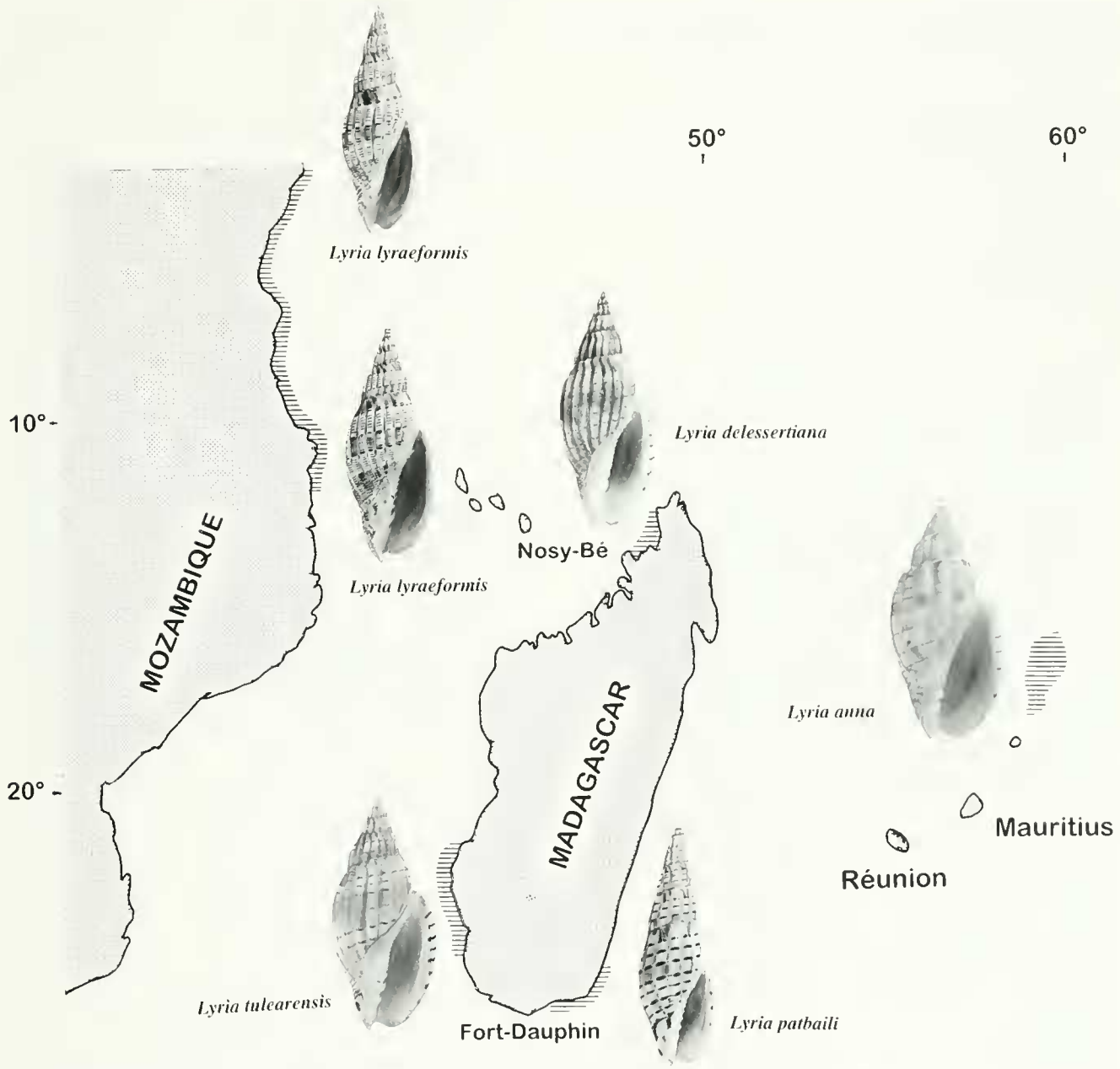

Figure 3. Generalized distributions (hatched areas) of the 5 species of *Lyria* occurring in the SW Indian Ocean. Paratype of *L. patbaili* illustrated. Distribution data from Weaver & duPont (1970) and Poppe & Goto (1992); however, Weaver & duPont (1970: 18) give the range of *L. delessertiana* as extending to the Comoro Islands and the southern Seychelles, and Poppe & Goto (1992: 65) record the range as extending to Diego Suarez [= Antseranana] but this needs confirmation. Two forms of *Lyria lyraeformis* are illustrated, the broad form occurs in all the species range from Mozambique to Somalia, the slender form occurs predominantly in the central part of its range, i.e. Kenya (Bail, pers. com.).

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